

Nevada Bureau of Water Quality Planning

Truckee River Water Quality Standards Review

January 28, 2014
Nevada Department of Wildlife
Reno, Nevada

Background on Truckee River Water Quality Standards (WQS) Review Activities

- Jan 6, 2011 – NDEP announced triennial WQS Review process
 - ◆ Req'd to hold public hearing at least once every 3 years to review WQS
 - ◆ Solicited public input; considered by NDEP in setting priorities
 - ◆ Feb 22, 2011 – Reno/Sparks/Washoe Co. submitted letters to NDEP requesting review of Total Phosphorus (TP) and Total Nitrogen (TN) WQS on Truckee River
 - ◆ 3rd Party review of Nutrient TMDL in the works for a number of years
 - ◆ NDEP: Review of standards prior to TMDL review is appropriate. Agreed the review should be undertaken
- Mid-2011 - 3rd Party Nutrient WQS review began

Background on Truckee River Water Quality Standards (WQS) Review Activities (cont'd)

- November/December 2011 – Held 2 Focus Group meetings with key stakeholders for 3rd Party Nutrient WQS review
 - Focus Group – key stakeholders
 - PLPT
 - USFWS
 - NDOW
 - City of Fernley
 - TCID
 - Churchill County
 - Working Group – Created earlier as part of TMDL review
 - NDEP
 - EPA
 - Cities of Reno and Sparks
 - TMWRF
 - Washoe County
 - TMWA

Background on Truckee River Water Quality Standards (WQS) Review Activities (cont'd)

- December 2011 – NDEP announces January 2012 workshop to launch WQS review to broader public
- Prior to January 2012 workshop, preliminary determination is made concluding that Lahontan Reservoir WQS should be reviewed prior to Truckee River WQS.
 - Truckee River and Lahontan Reservoir linked by virtue of Truckee Canal
 - CWA regs – take into consideration WQS of downstream waters; ensure WQS provide for attainment/maintenance of downstream WQS
 - NDEP has concerns about appropriateness of Lahontan nutrient WQS
- January 2012 workshop was held to discuss the review process but that the review will be delayed in order to first review Lahontan Reservoir standards

Background on Truckee River Water Quality Standards (WQS) Review Activities (cont'd)

- After further discussions with EPA, concluded that the standards for the Truckee River and Lahontan Reservoir can be developed separately reflecting the hydrology and characteristics of each individual waterbody.
 - HOWEVER - Truckee River Nutrient TMDL must show protection of uses to downstream waters, including Lahontan Reservoir
- Throughout 2013 - 3rd Party Nutrient WQS review restarted
 - Series of Working Group and Focus Group meetings held thru 2013
 - LimnoTech began modeling efforts to characterize DO response to varying N/P levels in river
 - Report to be finalized ~March 1
 - Results to be considered by NDEP in developing WQS proposal

Background on Truckee River Water Quality Standards (WQS) Review Activities (cont'd)

- January 28, 2014 – Begin engaging the larger public for input
 - NDEP to review all WQS (not just N/P)

Key Elements of Water Quality Standards

- 1) Designated beneficial uses
- 2) Criteria to protect beneficial use
- 3) Antidegradation provision (RMHQ)

Factors in Designating a Beneficial use

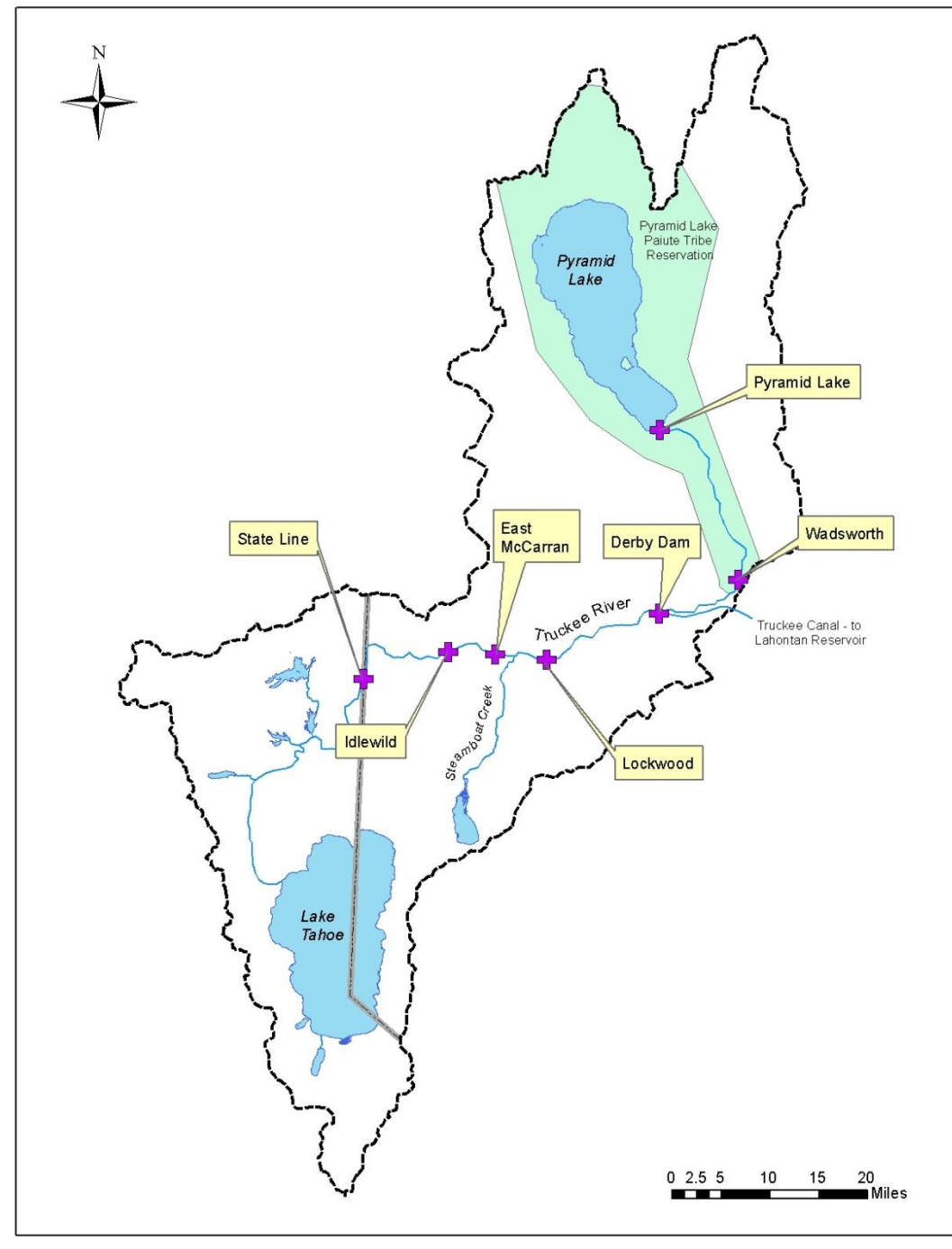
- Existing uses
- Public concerns
- Desired potential uses

Designating Reaches

- Physical characteristics (confluence)
- Changing land uses
- Beneficial uses (fish species)

Truckee River Reaches

- NDEP Jurisdiction
 - ◆ Stateline to Idlewild
 - ◆ Idlewild to East McCarran
 - ◆ East McCarran to Lockwood
 - ◆ Lockwood to Derby
 - ◆ Derby to PLPT bdry
- PLPT Jurisdiction
 - ◆ PLPT bdry to Pyramid Lake



Truckee River Beneficial Uses (NDEP Jurisdiction)

- Irrigation
- Livestock watering
- Contact recreation
- Noncontact recreation
- Industrial supply
- Municipal or domestic supply
- Propagation of wildlife
- Propagation of aquatic life

Truckee River Beneficial Uses – Propagation of Aquatic Life

- **Stateline to East McCarran** – all life stages of mountain whitefish, rainbow trout and brown trout
- **East McCarran to Lockwood** – juvenile and adult rainbow trout and juvenile and adult brown trout
- **Lockwood to Derby** - juvenile and adult rainbow trout and juvenile and adult brown trout. However, the species which are sensitive to temperature are expected to seek a cooler microhabitat during July and August
- **Derby to PLPT boundary** – early spawning Lahontan cutthroat and their incubation, larvae, juveniles and migration, from May through June, depending on hydrological conditions

Water Quality Criteria

- Numeric values which protect uses
 - ◆ Utilize sound scientific rationale
 - ◆ EPA guidance
- Natural conditions

Truckee River Water Quality Criteria

- Routine Pollutants
 - NAC 445A.1682 through 445A.1694
- Toxics – Statewide criteria – *NOT PART OF REVIEW*
 - NAC 445A.1236

Truckee River Routine Pollutant Criteria

- Temperature
- pH
- Total phosphate
- Orthophosphate
- Nitrogen – Total, nitrate, nitrite, ammonia
- Dissolved oxygen
- Suspended solids
- Turbidity
- Color
- Total dissolved solids
- Chloride
- Sulfate
- Sodium adsorption ratio
- Alkalinity
- Fecal coliform
- E coli
- BOD (biochemical oxygen demand)

Antidegradation Standards

- Nevada Revised Statute 445A.565 requires that any surface water whose quality is higher than the applicable standards must be maintained in their higher quality
- RMHQS set to characterize existing higher quality

Truckee River

Antidegradation Standards

- Temperature
- pH
- Total phosphate
- Orthophosphate
- Total nitrogen
- Suspended solids
- Turbidity
- Color
- Total dissolved solids
- Chloride
- Sulfate
- Sodium adsorption ratio
- Fecal coliform

Some Potential Revisions

- Nitrogen and Phosphorus standards
 - ◆ Dependent upon compliance with Dissolved Oxygen standard and downstream standards as modeled by 3rd Party
- Adjust nitrate standard
 - ◆ Less restrictive than current Total Nitrogen WQS
- Change “Total Phosphates” to “Total Phosphorus”
- Remove BOD (Biochemical oxygen demand)
- Alkalinity – updated guidance
- Chloride – updated guidance
- RMHQs – color, others?

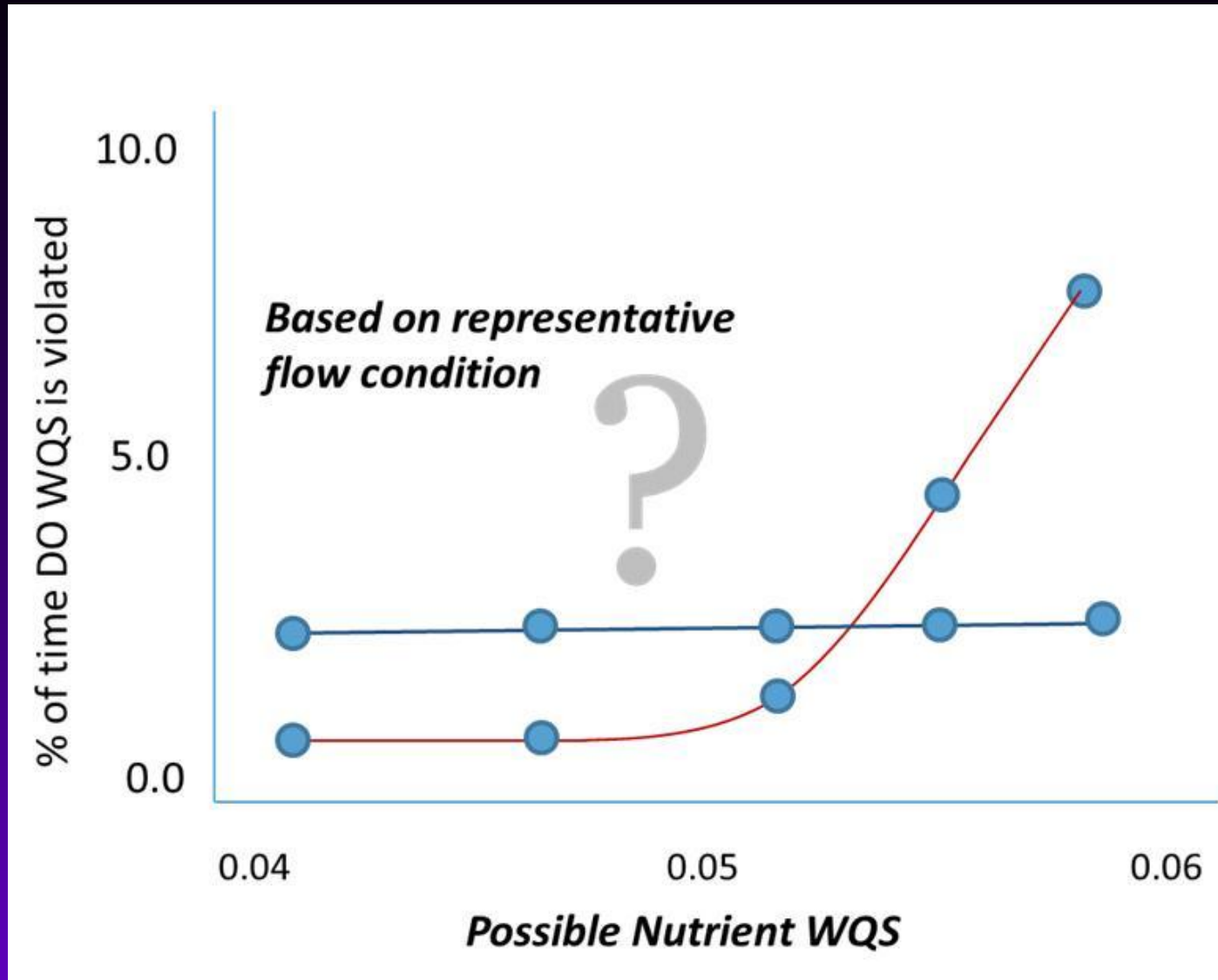
Some Nutrient WQS Background

- Nutrient criteria existed in 1970s
- Refined over time, with current WQS set in 1984
 - ◆ Phosphorus
 - ◆ Based largely on 1976 EPA Guidance (Retained in 1993 based upon 1986 EPA Guidance)
 - ◆ Nitrogen
 - ◆ Source is uncertain
 - ◆ Appear to have been based upon WQ that existed at the time
- Nutrient WQS need to be evaluated based upon ability to protect Dissolved Oxygen levels
 - ◆ 3rd Party modeling effort

Use of Models for WQS Review

- WARMF – flow, WQ from watershed
- TRHSPF – WQ in river
- Provide linkage between nutrient concentrations in the Truckee River and resulting dissolved oxygen levels
- Account for other factors
 - Flow, temperature, light, aeration, channel characteristics
- Tool to understand river water quality response (dissolved oxygen) to ranges of nutrient concentrations under range of flow conditions
 - Low Flow
 - Median Flow

Conceptual Plot of Model Results



Tentative Timeline

- 1/28/2014: NDEP Public Workshop relaunching WQS Review
- 3/1/2014: Final 3rd Party Report on modeling results
- 3/3/2014: Public Workshop – presentation of 3rd Party modeling results
- April 2014: Draft NDEP Rationale released for public comment
- May 2014: Public Workshop - NDEP presenting proposal
- 5/31/2014: Comments due on NDEP proposal
- 6/30/2014: Final NDEP Rationale/Petition submitted to Legislative Counsel Bureau
- Oct. 2014: State Environmental Commission hearing

Lahontan Reservoir WQS Schedule

Early February 2014: Release of draft Rationale

2/18 and 2/20/2014: Lahontan Reservoir WQS Review –
Public Workshops to discuss
proposed revisions

3/14/2014: Deadline for written comments on proposal

6/11/2014: State Environmental Commission

Questions?

Further information available:

Truckee River Information Gateway

<http://truckeeriverinfo.org/tmdl>

Nevada Division of Environmental
Protection

http://ndep.nv.gov/bwqp/truckee_rvw.html

Thank You

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